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# Road from PDR

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**ECS Release A SDPS/CSMS Critical Design Review  
14 August 1995**

# Road Map

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- **PDR conclusions**
- **PDR closure**
- **Community participation**
- **Additional ESDIS participation**
- **Key accomplishments**
- **CDR documentation overview**
- **Key design changes since PDR**
- **Errata and loose ends**

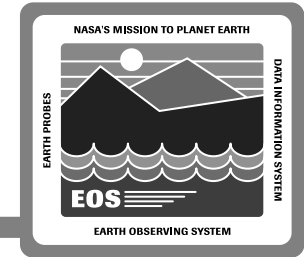
# PDR Conclusions



- No show stoppers
- CSMS cited for “nice job of integration” of design concepts, and an impressive use of commercial-off-the-shelf software
- SDPS cited for “a job well done,” “flexibility, scaleability, and evolvability [of ECS that are] well in hand,” and an impressive level of maturity in the design
- A substantial number of recommendations received regarding design, operations, and implementation-process improvement opportunities
- Go-ahead given to proceed into detailed design

***CDR preparation proceeded, refining the design baseline established at PDR. Changes from that baseline will be highlighted at this review.***

# PDR Closure



- RIDs (ECS and ESDIS) received during “PDR Season”:  
89 Level 1  
438 Level 2/3
- Open RIDs (as of 8/7/95):  
1 Level 1  
7 Level 2
- ECS-assigned RIDs are now pending project approval
- Many RID dispositions will be covered during the week’s briefings
- RIDs and responses reside on the ECS Data Handling System (EDHS),  
<http://edhs1.gsfc.nasa.gov>

# PDR Closure (Cont.)



Two “Key Issues” from PDR received special attention:

- **Expand operations focus**

**Ops workshop held 6 / 14-16**

**Expanded Ops Con document**

**M&O liaison per release**

**Moved trouble ticketing into Release A**

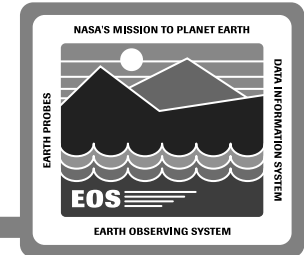
- **More closely integrate SDPS & CSMS**

**Combined segment teams**

**Developers’ workshop 5/30**

**“Key mechanisms” model**

# Post-PDR Organizational Change

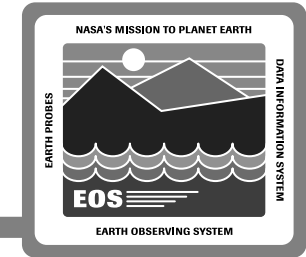


**Restructured the former SDPS, CSMS, and (parts of) SI&P organizations:**

- **Created a focused team for each release**
  - **Until PDR/IDR, in ECS SMO (System Management Office) - Release B**
  - **After PDR/IDR, in SCDO (Science and Communications Development Office) - Releases Ir1 and A**
- **Consolidated segment and system I&T efforts within each release team**
  - **Acceptance testing remains the responsibility of SMO**
- **Created the Multi-Release Support (MRS) team in SCDO**
  - **Hardware & network engineering**
  - **Data engineering**
  - **Development environment**
  - **Non-release focused prototypes (e.g., ATM)**
- **Manage cross-release issues via SCDO/SMO staff/management group**

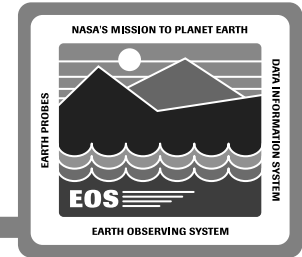
# Community Workshops & Reviews

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- **Algorithm I&T workshop** **April 18-19**
- **Data management working group** **May 4-5**
- **Planning & scheduling workshop** **May 8-9**
- **Prototype workshop #1** **May 31 - June 1**
- **Ops concept workshop** **June 14-16**
- **EP6 objectives and design reviews** **June 20 and August 4**

# Prototype Workshop #1



- **Purpose: obtain feedback on current A/B design concepts for**
  - data dictionary
  - advertising
  - user registration
  - desktop
  - Earth science search tool
- **Participants: tirekickers, DAACs, ESDIS, developers**
- **Some of the feedback:**
  - Dave Glover: “a quantum leap” forward
  - Overall impression: good improvement from EP4
  - ESST needs work (improved version demoed at CDR)
- **Ground swell of encouragement to deploy Advertising Service ahead of Release A (next version available September 1995; demo at CDR)**



# Operations Scenario Workshop

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- **Purpose:** involve the DAACs in Release A design-for-operability through discussions of end-to-end ops management and processing activities
- **Participants:** DAAC staff, ESDIS, developers, M&O
- **Feedback reflected in OCD (604 Part 2A) and CDR design**
- **Participant evaluation:** “Good workshop”, “Well organized, conducted”, “Good interchange”, “Let’s do more of this”

# DAAC Visits



- **Ir1 site surveys**

- **GSFC**
- **EDC**
- **MSFC**
- **LaRC**

**April 03-04**

**April 05-07**

**April 10-11**

**April 12-13**

- **Staff planning (Ir1, A, and B: B-only trips not listed)**

- **GSFC**
- **LaRC**
- **MSFC**
- **EDC**

**April 6**

**April 12**

**April 25**

**July 26-27**

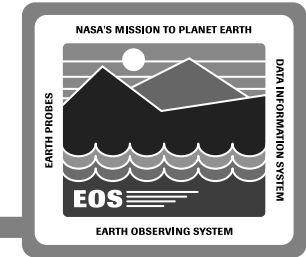
# DAAC Visits (Cont.)

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- **EDC: LPDAAC Science Advisory Panel** **April 11-13**
- **GSFC miscellaneous topics** **March 10 and June 19**
- **LaRC / SCF PDPS discussions** **July 10**

# Design Telecons (Ir1 and A Only)



- |  |          |
|--|----------|
| • PDPS - PGE Activation                      | March 31 |
| • System-wide request tracking               | April 14 |
| • CSMS Overview                              | April 28 |
| • Ingest - ECS ingest standards              | May 12   |
| • Ir1 AI&T environment & prod. system design | May 26   |
| • PDPS - production history                  | June 9   |

# Ops Telecons (Ir1 and A Only)

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- Ops concept document **March 16**
- Operations concepts **April 6**
- Ir1 overview **April 13**
- Release A science operations **May 4**
- DAAC computer sys admin & ops during A **May 11**

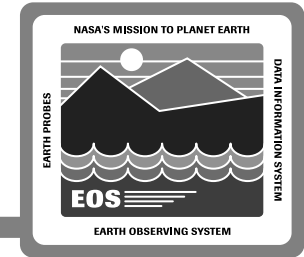
# Additional ESDIS Participation

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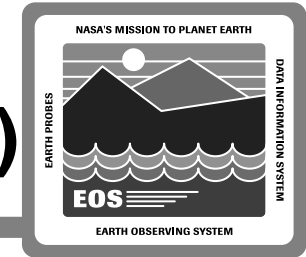
- **Cross-release review** **May 17**
- **Developers' workshop** **May 30**
- **HCI developers' workshop** **July 31**

# Developers Workshop #1



- **Purpose:** Held in part to address PDR recommendation to better integrate CSMS services with SDPS, and to provide developers' guidelines on the use of common services
- **Participants:** ECS developers and ESDIS (100+ attended)
- **“Client-server” (DCE/ODCE, with wrappers) development training:**
  - Service tutorials to ensure understanding of distributed environment
  - Implementation discussion on CSMS lessons learned
  - Review of code fragments which illustrate programming techniques
  - Sample client & server implementations provided after WS as models
- **The workshop prompted pre-CDR addressing of implementation details (e.g., development tools and libraries, exception handling, Pls)**

# Additional ESDIS Participation (Cont.)



- **CDR early-bird briefings:**

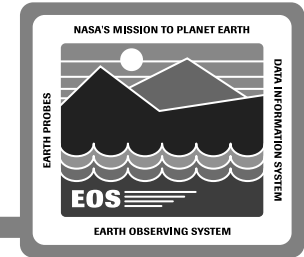
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| - Release A Client                      | June 27 |
| - Interoperability Subsystem            | June 27 |
| - Data Server Subsystem                 | June 28 |
| - Ingest Subsystem                      | June 29 |
| - Cross-subsystem issues                | July 5  |
| - External interfaces                   | July 5  |
| - Planning & Data Processing Subsystems | July 7  |
| - Communications Subsystem              | July 10 |
| - Management Subsystem                  | July 10 |

- **Many Ir1 and A design inspections**



# Key Post-PDR Accomplishments

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- **Advanced Release A design from preliminary to detailed stage**
- **Initiated Release Ir1 implementation, upgraded to include a prototype of the selected Release A COTS scheduler**
- **Completed initial advertiser implementation; readying it for early (pre-Ir1) deployment**
- **Completed EP6 design; initiated its implementation**
- **Delivered SDP toolkits 4 and 5**
- **Completed COTS selections for Releases Ir1 and A**

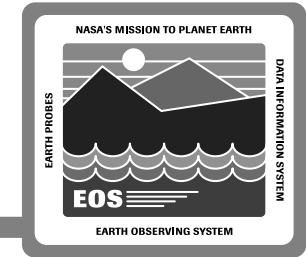
# Key Post-PDR Accomplishments (Continued)

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- Release A operations-readiness schedules developed and briefed to ESDIS and DAAC management, to a very positive response
- Re-engineered ECS ILN for each Release & FOS
- Upgrading ECS development environment for full development

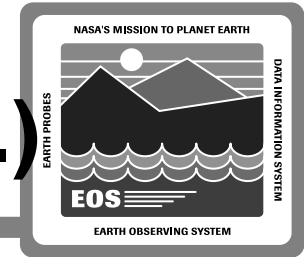
# CDR Documentation Overview



The complete CDR documentation set (available on the EDHS) contains 38 formally delivered items, comprising ~5000 pages:

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|--|---------------|
| • segment design spec (DID305)                     | 16 subvolumes |
| • database spec (DID311)                           | 2 volumes     |
| • internal interfaces definition (DID313)          | 1 volume      |
| • external interfaces definitions (DID209)         | 8 volumes     |
| • science user's guide (DID205)                    | 2 subvolumes  |
| • operations (DIDs 604, 605, 614, 616)             | 4 volumes     |
| • product assurance (DIDs 404, 514, 515, 516, 518) | 5 volumes     |

# CDR Documentation Overview (Cont.)



**Key technical papers (also available on the EDHS) include:**

- **Technical Baseline (for CDR-A)**
- **CDR Reviewer's Guide**
- **Production Topologies: A Tradeoff Study Analysis**
- **Theoretical Basis of the SDP Geolocation Package**
- **HDF-EOS Primer for Version 1 EOS**
- **Preliminary User View - ECS Metadata**
- **ECS User Interface Style Guide, Version 5**
- **Version Description Document for SDP Toolkit 5**
- **EP4 Evaluation Report**
- **Ir1 Mission Statement**

# Key Design Changes Since PDR



- Focused subsystem design representations upon shared (mostly CSMS) key mechanisms and internal interfaces model
- Increased the use of scenarios and M&O staff in refining design
- Updated CIDM design to reflect Release A use of modified V0 client
- Added gateways at ECS external interfaces to accommodate differing interprocess-communications and security models (all gateways build upon CIDM's V0 interoperability gateway design)
- Consolidated the DPREP CSCI into processing and ingest subsystems
- Selected RDBMS technology (with SQS extension) for Release A science data server - all DBMSs in Release A are Sybase
- Switched the base of CSS message-queuing service from COTS to custom solution (based on prototyping results)
- Moved MSS trouble ticketing and physical configuration management tools from Release B to Release A
- Moved the CIDM DDICT CI from Release A to Release B

# Errata and Loose Ends



- **EBnet consolidation (of ESN and Ecom) and associated reassignment of campus LAN design responsibility has delayed finalization of DAAC LAN designs and LAN/WAN connectivity aspects of external ICDs.**
- **EDOS interfaces (operational in B; to be tested in A) are not all finalized**
- **A few COTS selections are still in the approval process; one COTS selection (web browser) has been intentionally deferred**
- **Spatial query add-on to Sybase for Release A data server is still in development; delivery is on time for delivery in February**
- **FOS-unique CSMS features (e.g., EOC LAN design) will be briefed at the FOS CDR-A/B**